

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-ER03 / Lower Three Runs & Operations Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0053**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose / Scope

The Lower Three Runs Watershed Project is one of six geographical divisions of SRS established with the purpose of implementing the Federal Facility Agreement (FFA). The Lower Three Runs Watershed Project comprises several areas: R-Area, P-Area, and Bingham Pump Outage Pits in R-, L-, P- and K-Reactor Areas. R-Reactor Seepage Basins were used for the disposal of R-Reactor disassembly basin's purge water from 1957 to 1964. Soon after production began, a calorimetric test failure occurred and purge water containing high-level radioactive contamination was released to the emergency disassembly basin at R-Reactor and subsequently discharged to Basin #1. Basins 2-6 were subsequently excavated and received low-level radioactive purge water contamination during normal operations at R-Reactor. The 108-4R Overflow Basin was used between 1953 and 1964 for collecting diesel fuel from the incidental overflow of two adjacent underground storage tanks. The R-Area Burning/Rubble Pits were used for the disposal of paper, plastics, wood, telephone poles, rubber, oils, and organic solvents of unknown origins. These wastes were periodically burned although in 1973, burning of wastes was discontinued. The pits were then used to accept rubble and debris such as concrete, bricks, tile, asphalt, plastics, wallboard, rubber and non returnable empty drums. One pit was filled, closed, and covered with a layer of soil in 1978. The other was closed from receiving debris in 1981, but was never covered. The Bingham Pump Outage Pits in K-, R-, L-, and P-Areas received low-level radioactive contaminated debris such as pipes, cables, ladders, and drums generated during the 1957 and 1958 repairs to the primary and secondary cooling water systems in the reactors. The Par Pond Sludge land application site received sludge from the Central Shops Sludge lagoon in December 1980. Acceptable past disposal practices associated with historical reactor operations have produced waste units within the P- and R-Reactor Areas. Monitoring well data collected from the P- and R-Reactor Areas indicates the groundwater is contaminated with tritium, chlorinated volatile organics, other radionuclides, heavy metals, and sulfate.

The following support has been determined to be essential to the SRS Environmental Watershed Projects and the accountability for these cross cutting activities has been placed in the Lower Three Runs Watershed. The activities are as follows:

Post Closure Management: This task is to perform regular maintenance (mowing, erosion control measures, placement of signs, fence repair, etc.) and monitoring for closed and post-closure ER waste sites in accordance with RCRA/CERCLA requirements.

Engineering Technical Initiatives: Activities include crosscutting, programmatic initiatives and process improvements to benefit the overall Watershed concept

ER Waste Operations: Provides service and maintenance of equipment for IDW collection, transportation of IDW water. The ER Waste Operations Program provides the operations support necessary to coordinate day to day logistics for compliance sampling and purge water management.

Watershed Assessments: Current Risk Evaluation of the site streams. Order of magnitude estimates were included for the Assessment phase for the following Integrator Operable Units (IOU):

- Flood Plain Swamp
- Lower Three Runs

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- Steel Creek
- Four Mile Branch
- Upper Three Runs
- Pen Branch

Waste Treatment Program: Developing and implementing an approved Waste Certification Program that includes certification as a waste volume generator as well as Aqueous Management. Coordinate ER compliance with waste management requirements. Performs the necessary verification requirements to ensure ER generated waste is managed correctly.

Technology Demonstration: Organizing and directing the project teams for implementation and any associated activities with innovative technology demonstrations thus providing overall management and supervision of Technology Demonstrations at Watershed Projects.

Facility Support: Providing ER Watershed projects field support, including equipment and supplies, for field work at remote SRS locations, including but not limited to trailers, generators, tools, safety equipment, consumables and services.

Site Evaluations: The evaluation of waste sites to determine if the site requires additional cleanup or is a No Further Action (NFA) site.

RCRA Groundwater Monitoring Program: The sampling, analysis, data management and compliance reports as required by the RCRA Part B Permits and Interim Status agreements that must be performed to meet permitting requirements.

Definition of Scope: Remediation of the Lower Three Runs Watershed Project will consist of the following:

- preliminary evaluation of suspect areas to determine if action is necessary,
- investigation and analysis of the identified waste units and any suspect areas identified through preliminary evaluations to determine further investigation and possible required remediation,
- implementation of remediation technologies to mitigate the impact of contaminants of concern on human health and the environment, and
- post action monitoring to ensure that the implemented technology was effective.

Remediation of the Lower Three Runs Watershed Project in accordance with RCRA and CERCLA will decrease human and environmental risks to acceptable levels. The Lower Three Runs Watershed Project will require remediation of

- primary source material,
- affected soils,
- affected surface water pathways, and
- affected groundwater.

Technical Approach

The technical approach to the preliminary evaluations and investigations will consist of sampling soil, surface water, and groundwater to determine the nature, extent, and mobility of the contaminants associated with the waste units. Once the sampling has been completed, analysis of the data will be performed to evaluate the current and future impacts to human health and the environment due to the waste unit. This information will be used to

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screen remediation technologies to identify the most effective remedy. The remedy will then be implemented, and post action monitoring initiated to ensure that it is effective.

The types of remedies anticipated to be used or currently in use on the Lower Three Runs Watershed Project are capping (using either natural or synthetic materials), removal and proper disposal of contaminated soil and sediments, and other actions resulting from the FFA process. Land use controls will be maintained where needed to prevent exposure when long-term prevention remedies are utilized.

In addition to these standard technologies, the Environmental Restoration Division is aggressively pursuing innovative technologies that will either enhance the effectiveness of the remedy or minimize the cost. Innovative technologies to be deployed in this project include various sampling and analysis methods to reduce Investigative Derived Waste. Technologies include

- Alternatives to pump and treat for ground water contamination;
- Long term low permeability cover systems;
- In situ solidification and stability technologies;
- New technologies to characterize and remediate DNAPL;
- Technologies to remotely identify the presence of buried waste;
- Phytoremediation and other passive treatment systems;
- Technologies to treat or hydraulically control tritium contaminated groundwater.

Once ER's waste sites have been closed (remediated) in accordance with regulatory requirements and are in post closure phase, the sites will require regular maintenance such as erosion control, placement of signs, fence repair etc. Periodic inspections and monitoring are also required. Also required is verification that the generated waste meets the acceptance criteria of the designated treatment, storage, and disposal facility.

Activities include

- performing programmatic initiatives and process improvements for technical activities such as technology development, risk assessment, codes and standards, training, software research, safety documentation, and configuration management,
- centralizing coordination of waste certification / pollution prevention / waste minimization within the Environmental Restoration Division (ERD),
- systematically evaluating waste areas to lead to a defensible recommendation for either conducting further response action or taking no further action through a graded, step approach, and
- conducting well monitoring and analysis through groundwater sampling, analysis, data management, well maintenance, and reporting.

Project Status in FY 2006:

"Just in time" compliance is depicted in "Planning Case." ("Just in time" is defined as adherence to compliance direction in a manner that is "Just in time" to meet regulatory deliverables and avoid fines and penalties.)

- Continue implementation of remediation technologies to mitigate the impact of contaminants of concern on human health and the environment.
- Continue RCRA Groundwater Monitoring Program by conducting well monitoring and analysis through groundwater sampling, analysis, data management, and reporting.
- Continue verification program so that generated waste meets the acceptance criteria of the designated treatment, storage and disposal facility and centralized coordination of waste certification, pollution prevention, and waste minimization within ERD.
- Continue Post Closure maintenance activities on selected ERD waste sites.

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- Continue field support operations.

Due to insufficient funding at the target level, the following projects are unfunded

- 1113 R-Area Acid/Caustic Basins
- 1216 Bingham Pump Outage IHMU

If the current funding shortfall from target to planning case in FY01 is not addressed, outyear projections will increase for those projects (1216-BPO IHMU, 1111-108-4R Overflow Basin, and 1113 -R-Area Acid/Caustic Basins).

R-Area Reactor Seepage Basins (904-57G, -58G, -59G, -60G, -103G, and -104G) and 108-4R Overflow Basin (108-4R) activities will be in progress by FY06. K-Area Bingham Pump Outage Pits (643-1G) characterization, assessment, and remediation activities will be completed by FY06. L-Area Bingham Pump Outage Pits (643-2G, and -3G), P-Area Bingham Pump Outage Pit (643-4G), and R-Area Bingham Pump Outage Pits (643-8G, -9G, and -10G) characterization, assessment, and remediation activities will be completed by FY06. R-Area Acid/Caustic Basin activities will be completed by FY06 (target). Complete Site Evaluations by FY 2006. Submittal of quarterly reports for Site Evaluations (3701) and removal actions will be ongoing in FY06 with scope completion scheduled for FY06. Watershed (3151) will have ongoing assessment activities.

Post-2006 Project Scope:

"Just in time" compliance is depicted in "Planning Case." Certain projects (Bingham Pump Outage Isolated Hazardous Material Unit, 108-4R Overflow Basin, and R-Area Acid/Caustic Basins) are unfunded at target level of funding and could impact completion.

- Continue implementation of remediation technologies to mitigate the impact of contaminants of concern on human health and the environment through FY17.
- Continue RCRA Groundwater Monitoring Program by conducting well monitoring and analysis through groundwater sampling, analysis, data management, and reporting through FY32.
- Continue verification program so that generated waste meets the acceptance criteria of the designated treatment, storage and disposal facility and centralized coordination of waste certification, pollution prevention, and waste minimization within the ER Department through FY34.
- Complete Post Closure maintenance activities on selected ERD waste sites by FY38.
- Continue field support operations through FY34.

If the current funding shortfall from target to planning case in FY00 is not addressed outyear projections will increase. In all cases, failure to meet regulatory milestones will result in potential enforcement actions, fines, and penalties.

R-Area Reactor Seepage Basins (904-57G, -58G, -59G, -60G, -103G, and -104G) and 108-4R Overflow Basin (108-4R) activities will be completed by FY10. P-Area Reactor Seepage Basins (904-061G, 062G, and 063G) remedial activities will be completed by FY09. Par Pond Sludge Land Application Site characterization, assessment, and remediation construction activities being completed by FY13. R-Area Rubble Pile (631-25G) activities will be completed by FY15. Post-closure activities such as maintenance and monitoring will continue. Assessment activities will be ongoing through FY07 for project 3151.

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Project End State

The Lower Three Runs Watershed Project will meet the EM site end state after the completion of the remediation and monitoring described in the technical approach. After remediation has been completed, the sites will be subject to periodic five year reviews of the ROD. Portions of the project where institutional controls were implemented will continue to require oversight until the property is transferred with appropriate deed restrictions.

Cost Baseline Comments:

- "Just In Time" compliance is depicted in "Planning Case."
- Target Funding for FY01 is insufficient for current regulatory requirements.
- Certain projects are unfunded at target level of funding and could impact completion.
- The Cost Baseline reflects fully utilized target funding in outyears (FY02 - FY06) for existing and anticipated regulatory requirements.
- Budget for regulatory driven Low Level Waste disposal will be included in Solid Waste Division's Program Baseline Summaries (PBS).

The following projects have been identified as compliance work for FY01; however, they are unfunded at the current target level.

- 1113 R-Area Acid/Caustic Basins (FY01= \$735,421)

- 1216 Bingham Pump Outage IHMU (FY01= \$381,891)

, , NOTE: All costs include ESS, Site Overhead, & Additional Surcharges

Safety & Health Hazards:

The criteria for determining the radiological hazard categories are provided in DOE-STD-1027-92 and the criteria for determining the chemical hazard categorization are provided in WSRC-MS-92-206. Chemical inventory is controlled in accordance with RDP 14.1, Chemical Management Program and Chemicals and Nonradioactive Hazardous Materials Control (U), DPSOL 105-1845-K.

Safety & Health Work Performance:

Activities and checkpoints are described by the Integrated Management System Description. The conditions and requirements are clearly established and agreed upon prior to the start of any project, and those requirements are contractually binding upon WSRC. The key elements of the WSRC Integrated Safety Program are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, provide feedback on adequacy of controls, and continue to improve safety management. The WSRC Integrated Procedures Management System (IPMS) is the primary mechanism for implementing the objective, principles and functions of the Safety Management System. This system establishes company-level, division-level, and program-specific procedures consistent with organizational roles and ensures a consistent, discipline site wide approach to safety while performing work. The resource description, costs, and skill mix are defined in the following Sections: Costs D.2.2, Costs D.3, FTEs D.2.5, and FTEs D.2.7 of the IPMS.

PBS Comments:

The remediation of the Lower Three Runs & Operations Project is monitored very closely by both EPA Region IV and SCDHEC through the implementation of the FFA. If progress in this watershed is not made in accordance with the FFA, RCRA permits, and settlement agreements then DOE could be subject to fines and penalties from both regulatory agencies. In addition, portions of the Lower Three Runs Watershed Project have been identified as areas that could be developed for industrial purposes in the future. This future industrial use of the site could be impeded if

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remediation of the watershed is not conducted as planned.

Baseline Validation Narrative:

ERD's Baseline Validation History

The Environmental Restoration (ER) Department was established in 1990 with the mission to clean up (remediate) the environmental damage incurred during past operations. Although the scope of cleanup was not clearly defined at that time, DOE, through its contractors, initially identified 420 waste units. In 1992, the ER Department defined and bounded this scope of work via the Federal Facilities Agreement (FFA), a legally binding agreement between the Department of Energy (DOE), the U.S. Environmental Protection Agency, and the State of South Carolina. However, ER and DOE management realized the need to continue refining the scope defined in the FFA. A tool to manage the work in terms of scope, schedule, and cost was also needed. This realization led to the development of Baseline 93 (BL93).

To accomplish the scope of work found in the approved FFA, the ER Department realized that the scope of work had to be more clearly defined. BL 93 was organized by scope, schedule, and cost in accordance with the EM-40 "Project Management Notebook".

The first baseline was prepared using the "Balanced Program Strategy". This strategy considered the needs and requirements of worker and public health and safety, environmental concerns (risk), regulatory compliance and funding considerations. A mixture of high-, medium-, and low-risk waste units was scheduled at the same time. This balanced approach would later be changed to schedule the higher-risk units prior to lower-risks units.

The cost estimates in this baseline were in FY93 dollars. Escalation (to accommodate rising costs) was applied beginning in FY95. Neither contingency nor management reserve were built in to the cost estimate at this time. The baseline time frame extended only to FY99 per DOE direction and did not account for the full Life Cycle Cost. In early 1994, an Independent Cost Estimating (ICE) team reviewed BL93 and verified the building blocks used in development of BL93 were accurate.

Baseline 93 Highlights

- The parametric model template was developed for the SRS from a baselining model used at DOE Hanford. DOE approved this model.
- This first ER baseline used parametric modeling to estimate the cost of a project.
- The baseline reflected target values through FY99.
- The scope of work encompassed 420 waste units identified in the FFA, including the RCRA scope of work.
- Schedules were developed using legal drivers (i.e., settlement agreements, FFA and court orders).
- BL93 was endorsed by Savannah River Operations Office and EM-42 as a quality document.
- BL93 included data for FY93 to FY99 only per DOE direction.
- BL93 with the ICE comments included was utilized to request future funding.

In FY94, Congress required that DOE provide a Baseline Environmental Management Report (BEMR) with annual updates.

The ER Department used this request as an opportunity to update the FY93 baseline. This report used the Life Cycle Cost Estimate (LCCE) for the first time. The LCCEs were not fully complete at the first request of the BEMR so parametric modeling in conjunction with LCCEs were used to

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develop the cost estimates for BEMR 94. Using legal drivers, BEMR 94 schedules indicated the life cycle of the ER program (including surveillance and monitoring) would extend to FY2045.

This was the first SRS ER baseline that included a full life cycle cost schedule for FFA Appendix C waste units. An estimated cost, for assessment only, was applied to FFA Appendix G waste units that had not been characterized or estimated in BL93. The estimates to cleanup Appendix G waste units were not included to capture the total cost of the ER program because there was not enough information to make an educated guess.

In the absence of a formal future land use designation, BEMR 94 assumed a base case that closely followed industrial criteria for remediation of waste units. All budgets were in constant FY95 dollars. No contingency or escalation was applied.

BEMR 94 Highlights

- Estimates were taken from a combination of modeled LCCs and parametric estimates.
- Schedules were developed from legal drivers (FFA). The end date for all ER activity was estimated to be FY2045.
- The number of waste units could increase due to new discoveries.
- An estimate was included to cover the assessment of Appendix G waste units; no remediation costs were included.

BEMR 96 was the next update required by congress. In this update, technology approaches that would lead to productivity improvements were assumed. Remediation of FFA Appendix G waste units were now included and was the major contributor to the increase in cost from BEMR 94 to BEMR 96. These costs were developed using a model that assumed past experience that would continue for future site evaluation activities and cost. It was also assumed that 25% of the waste units in the Site Evaluation (SE) Program would be classified as high-risk sites and move into the base program. This assumption later proved to be incorrect.

BEMR 96 Highlights

- Estimates were taken from modeled LCCs.
- Schedules were developed from legal drivers (FFA).
- With new waste unit discoveries, in addition to the split of existing waste units for tracking purposes, the scope of work was increased to 478 waste units.

Changing technologies and assumptions in land use demonstrated a need to further define the ERD scope of work, schedule, and cost. In April of 1996, ER issued the most inclusive baseline to date. The assumptions were clearly documented, with contingency derived from risk analysis and escalation applied in a logical manner (not straight-lined).

- BL96 used the information taken from LCCs. These estimates were activity-based estimates with specific resources identified and applied to work scope.
- Schedules were then developed by applying regulatory drivers (i.e., FFA, primary agreements, other agreements and drivers).
- After further evaluation, some waste units were combined, dropping the population of waste units to 467.
- Although BEMR 96 included order of magnitude costs for remediation of waste units in Appendix G, they were not included in BL96. BL96 did not include any planning estimates.
- Schedules used the same regulatory drivers as BEMR 96.

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In order to validate BL96, an ICE review was conducted.

The ICE team comments centered on the LCCEs. The cost delta between BL96 and BL96 ICE is primarily attributed to changes in scheduling and costs for program support. The agreed-to ICE comments significantly reduced the cost of this scope in the outyears. This review concluded with preparation of a baseline change package addendum to BL96 in April 1997. The ICE comments were incorporated into revised LCCE beginning in FY97.

A primary objective of the Ten Year Plan was to cleanup as many waste units as possible within ten years. The ER Program planned to complete remediation of the majority of high- and medium- risk waste units within ten years assuming regulatory flexibility with rescheduling of work and that funding would be available to support the work.

The concept of organizing work scope into areas (PBS) was first introduced in the Ten Year Plan. The SRS ER Program chose to utilize the natural occurrence of watersheds (areas) to summarize the projects. This PBS is a product of this WBS change.

Ten Year Plan Highlights

- Basis for the existing WBS configuration.
- Most high-risk units in cleanup by FY2006.
- 25% of Appendix G units were assumed to require further assessment and remediation.
- Scope of work was 467 sites.

The "Accelerating Cleanup: Paths to Closure" report was built on the concepts of the Ten Year Plan. Expanding on the area format, data requirements were further refined to produce an integrated management strategy for Environmental Restoration efforts across the DOE Complex. The ER program at SRS was also streamlining the regulatory process to accelerate remediation. One streamlining concept, the Plug-in Record of Decision (ROD) was also introduced. The Plug-in ROD is designed to reduce the time from characterization to actual remediation for sites with similar contamination where the same remediation technology is applied. Work scope was also re-evaluated to achieve maximum remediation results and cost reductions. Included in this update was the addition of the Integrator Operable Units (IOUs) that extended the schedule for cleanup after all the waste units in that area had been remediated.

Accelerated Cleanup: Paths to Closure Highlights

- Approved LCCEs were used to develop ACP Cost.
- Schedules were based on a new FFA, which reflected the cleanup of high-risk waste units first, followed by sites of lower risk.
- Scope of work was 477 waste units.

During FY97 and FY98, LCCEs were updated yearly to include the latest technologies used to clean up the waste units, which greatly increased the productivity of the ERD Program.

Incorporation of technological advances resulted in increased savings from BL96 though the scope increased since BL96, due to site evaluation units

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moving into the base program.

During FY98, ER's Technical baseline was reviewed by TetraTech EM, Inc. and in November 1998 validated with minimal recommendations. These recommendations are under review and are being incorporated in future revisions to the LCCes.

Current Baseline Estimate Highlights

- Most comprehensive baseline
- Integration of Strategic Planning
- Environmental Risk Analyses and Assignment of waste units.
- Business Risk Analyses
- Baseline developed by consensus building by ERD, DOE, Regulators and the Public
- LCCes reviewed and approved by DOE
- FFA is primary driver of program
- Changes from BL96 to current estimates reconciled
- Recognition of new technologies
- Again, some waste units were split apart and newly discovered, increasing the ER program scope to 477 waste units.
- The ER program completion date moved from FY2045 to FY2038.

During the last six years, ERD has undergone significant improvement in defining work scope and estimating the cost to complete this scope. LCCes and schedules have evolved to definitive documents that will more accurately measure future changes in scope, schedule, and cost. A configuration control process is used to manage this baseline.

General PBS Information

Project Validated?	Yes	Date Validated:	10/3/1996					
Has Headquarters reviewed and approved project?	No							
Date Project was Added:	12/1/1997							
Baseline Submission Date:	7/3/1999							
FEDPLAN Project?	Yes							
Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y	N	Y	N	Y	Y	Y

Project Identification Information

DOE Project Manager: Cynthia V. Anderson

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DOE Project Manager Phone Number: 803-725-3966
DOE Project Manager Fax Number: 803-725-7548
DOE Project Manager e-mail address: cynthia-v.anderson@srs.gov
Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (current year dollars)	316,394	729,932	1,046,326	20,110	20,110	4,465	4,465	20,253	28,173	31,224	28,379	39,653	42,676	51,966	49,495	
PBS Baseline (constant 1999 dollars)	282,482	464,641	747,123	20,110	20,110	4,465	4,465	20,253	27,194	29,092	25,746	35,028	36,707	43,523	40,364	
PBS EM Baseline (current year dollars)	316,394	729,932	1,046,326	20,110	20,110	4,465	4,465	20,253	28,173	31,224	28,379	39,653	42,676	51,966	49,495	
PBS EM Baseline (constant 1999 dollars)	282,482	464,641	747,123	20,110	20,110	4,465	4,465	20,253	27,194	29,092	25,746	35,028	36,707	43,523	40,364	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	50,856	43,543	34,836	29,753	225,407	216,318	68,447	38,751	18,100	3,921	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	40,383	33,667	26,227	21,811	152,654	128,228	35,513	17,599	7,195	1,364	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	50,856	43,543	34,836	29,753	225,407	216,318	68,447	38,751	18,100	3,921	0	0	0	0	0	0

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	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS EM Baseline (constant 1999 dollars)	40,383	33,667	26,227	21,811	152,654	128,228	35,513	17,599	7,195	1,364	0	0	0	0	0	0

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	3.60%	3.60%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 6/12/2015

Current Projected End Date of Project: 9/30/2038

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	663,912	Actual 1997 Cost:	20,110	Actual 1998 Cost:	4,465
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	639,337	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			17,262
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	656,599				

Project Cost Changes

Cost Adjustments Reconciliation Narratives

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Project Reconciliation

Cost Change Due to Scope Deletions (-):

Cost Reductions Due to Efficiencies (-):

Cost Associated with New Scope (+):

Cost Growth Associated with Scope Previously Reported (+): 35,101 Regulatory changes, updated estimates, & scope changes resulted in a net cost growth.

Cost Reductions Due to Science & Technology Efficiencies (-):

Subtotal: 691,700

Additional Amount to Reconcile (+): 30,848

Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): 722,548

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Gunsite 218 Rubble Pile RFI/RI Field Start	SR-ER03-009		6/30/2009	6/30/2009			Y				
Gunsite 218 Rubble Pile RFI/RI ROD Submittal	SR-ER03-017		6/30/2012	6/30/2012			Y				
Gunsite 218 Rubble Pile RFI/RI Remedial Action Start	SR-ER03-018		9/30/2013	9/30/2013			Y				
L- and P-Area Bingham Pump Outage Pits (643-2G, 3G,4G,8G,9G,	SR-ER03-006		11/9/1999	11/9/1999			Y				
L- and P-Area Bingham Pump Outage Pits (643-2G, 3G,4G,8G,9G,	SR-ER03-014		2/9/2001	2/9/2001			Y				
LT S&M Completion (If applicable)	SR-ER03-003		9/30/2038	9/30/2038							
Lower Three Runs IOU RA Start	SR-ER03-103		12/30/2017	12/30/2017			Y				
Outfall P-10 Field Start	SR-ER03-025		3/30/2002	3/30/2002			Y				
Outfall P-10 RA Start	SR-ER03-027		6/30/2006	6/30/2006			Y				
Outfall P-10 ROD Submittal	SR-ER03-026		3/30/2005	3/30/2005			Y			Y	
P-Area Reactor Seepage Basins Groundwater Field Start	SR-ER03-021		6/30/2004	6/30/2004			Y				

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
P-Area Reactor Seepage Basins Groundwater RA Start	SR-ER03-023		9/30/2009	9/30/2009			Y				
P-Area Reactor Seepage Basins Groundwater ROD Submittal	SR-ER03-022		6/30/2008	6/30/2008			Y			Y	
P-Area Reactor Seepage Basins Source RA Start	SR-ER03-024		6/30/2004	6/30/2004			Y				
Par Pond and Old R-Area Discharge Canal RA Start	SR-ER03-020		6/30/2013	6/30/2013			Y				
Par Pond and Old R-Area Discharge Canal RI Field Start	SR-ER03-012		3/30/2009	3/30/2009			Y				
Par Pond and Old R-Area Discharge Canal ROD Submittal	SR-ER03-019		3/30/2012	3/30/2012			Y			Y	
Par Pond Sludge Land Application Site RFI/RI Field Start	SR-ER03-010		6/30/2008	6/30/2008			Y				
Par Pond Sludge Land Application Site RA Start	SR-ER03-029		9/30/2012	9/30/2012			Y				
Par Pond Sludge Land Application Site ROD Submittal	SR-ER03-028		6/30/2011	6/30/2011			Y			Y	
Project Mission Complete	SR-ER03-002		6/12/2015	6/12/2015							
R-Area Acid/Caustic Basin (904-79G) RA Start	SR-ER03-031		12/30/2003	12/30/2003			Y				
R-Area Acid/Caustic Basin (904-79G) RFI/RI Field Start	SR-ER03-011		9/30/1999	9/30/1999			Y				
R-Area Acid/Caustic Basin (904-79G) ROD Submittal	SR-ER03-030		9/30/2002	9/30/2002			Y			Y	
R-Area Burning/Rubble Pits (131-R, -1R) RA Start	SR-ER03-033		9/30/2005	9/30/2005			Y				
R-Area Burning/Rubble Pits (131-R, -1R) RFI/RI Field Start	SR-ER03-008		6/30/2001	6/30/2001			Y				
R-Area Burning/Rubble Pits (131-R, -1R) ROD Submittal	SR-ER03-032		6/30/2004	6/30/2004			Y			Y	
R-Area Groundwater Field Start	SR-ER03-034		3/30/2006	3/30/2006			Y				
R-Area Groundwater RA Start	SR-ER03-036		6/30/2017	6/30/2017			Y				

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
R-Area Groundwater ROD Submittal	SR-ER03-035		3/30/2016	3/30/2016			Y			Y	
R-Area Reactor Seepage Basins (904-57G, -58G, -59G, -60G, -103G,	SR-ER03-005		9/19/2001	9/19/2001			Y			Y	
R-Area Reactor Seepage Basins (904-57G, -58G, -59G, -60G, -103G,	SR-ER03-007		12/30/2002	12/30/2002			Y				
R-Area Rubble Pile (631-25G) RA Start	SR-ER03-038		12/30/2013	12/30/2013			Y				
R-Area Rubble Pile (631-25G) RFI/RI Field Start	SR-ER03-013		9/30/2009	9/30/2009			Y				
R-Area Rubble Pile (631-25G) ROD Submittal	SR-ER03-037		9/30/2012	9/30/2012			Y			Y	
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-047		12/31/1998	12/31/1998		12/18/1998	Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-048		3/31/1999	3/31/1999			Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-049		6/30/1999	6/30/1999			Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-050		9/30/1999	9/30/1999			Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-051		12/31/1999	12/31/1999			Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-052		3/31/2000	3/31/2000			Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-053		6/30/2000	6/30/2000			Y				
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-054		9/30/2000	9/30/2000			Y				
K-Area Bingham Pump Outage Pit (643-1G) Remedial Action Start	SR-ER03-118		3/30/1999	3/30/1999			Y				
Lower Three Runs IOU Field Start	SR-ER03-060		9/30/2013	9/30/2013			Y				
Lower Three Runs IOU ROD	SR-ER03-061		9/30/2016	9/30/2016			Y				
R-Area Bingham Pump Outage Pits (643-8G,-9G, -10G) ROD	SR-ER03-065		8/8/2001	8/8/2001			Y				
R-Area Bingham Pump Outage Pits (643-8G, -9G, -10G) RA Start	SR-ER03-063		12/30/2002	12/30/2002			Y				

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Lower Three Runs IOU Monitoring Field Start	SR-ER03-070		9/30/2001	9/30/2001			Y				
Stormwater Outfall A-013 Field Start	SR-ER03-072		9/30/2005	9/30/2005			Y				
Stormwater Outfall A-013 ROD	SR-ER03-075		9/30/2008	9/30/2008			Y			Y	
Stormwater Outfall A-013 RA Start	SR-ER03-076		12/30/2009	12/30/2009			Y				
A-001 Outfall Field Start	SR-ER03-080		12/30/2007	12/30/2007			Y				
A-001 Outfall ROD	SR-ER03-081		12/30/2010	12/30/2010			Y			Y	
A-001 Outfall RA Start	SR-ER03-083		3/30/2012	3/30/2012			Y				
P-Area Reactor Groundwater Field Start	SR-ER03-090		3/30/2009	3/30/2009			Y				
P-Area Reactor Groundwater ROD	SR-ER03-091		9/30/2017	9/30/2017			Y			Y	
P-Area Reactor Groundwater RA Start	SR-ER03-092		12/30/2018	12/30/2018			Y				
Combined Spills North of Building 105-R Field Start	SR-ER03-100		12/30/2011	12/30/2011			Y				
Combined Spill North of Building 105-R ROD	SR-ER-102		12/30/2014	12/30/2014			Y			Y	
Combined Spills North of Building 105-R RA Start	SR-ER03-104		3/30/2016	3/30/2016			Y				
Project Start	SR-ER03-001		10/1/1996								
Project End			9/30/2040								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Gunsite 218 Rubble Pile RFI/RI Field Start	SR-ER03-009										
Gunsite 218 Rubble Pile RFI/RI ROD Submittal	SR-ER03-017										
Gunsite 218 Rubble Pile RFI/RI Remedial Action Start	SR-ER03-018										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
L- and P-Area Bingham Pump Outage Pits (643-2G, 3G,4G,8G,9G,	SR-ER03-006										Unfunded at Target
L- and P-Area Bingham Pump Outage Pits (643-2G, 3G,4G,8G,9G,	SR-ER03-014										Unfunded at Target
LT S&M Completion (If applicable)	SR-ER03-003				Y						
Lower Three Runs IOU RA Start	SR-ER03-103										
Outfall P-10 Field Start	SR-ER03-025									Y	
Outfall P-10 RA Start	SR-ER03-027									Y	
Outfall P-10 ROD Submittal	SR-ER03-026									Y	
P-Area Reactor Seepage Basins Groundwater Field Start	SR-ER03-021										
P-Area Reactor Seepage Basins Groundwater RA Start	SR-ER03-023										
P-Area Reactor Seepage Basins Groundwater ROD Submittal	SR-ER03-022										
P-Area Reactor Seepage Basins Source RA Start	SR-ER03-024										
Par Pond and Old R-Area Discharge Canal RA Start	SR-ER03-020										
Par Pond and Old R-Area Discharge Canal RI Field Start	SR-ER03-012										
Par Pond and Old R-Area Discharge Canal ROD Submittal	SR-ER03-019										
Par Pond Sludge Land Application	SR-ER03-010										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Site RFI/RI Field Start											
Par Pond Sludge Land Application Site RA Start	SR-ER03-029										
Par Pond Sludge Land Application Site ROD Submittal	SR-ER03-028										
Project Mission Complete	SR-ER03-002										
R-Area Acid/Caustic Basin (904-79G) RA Start	SR-ER03-031										Unfunded at Target
R-Area Acid/Caustic Basin (904-79G) RFI/RI Field Start	SR-ER03-011										
R-Area Acid/Caustic Basin (904-79G) ROD Submittal	SR-ER03-030										Unfunded at Target
R-Area Burning/Rubble Pits (131-R, -1R) RA Start	SR-ER03-033										
R-Area Burning/Rubble Pits (131-R, -1R) RFI/RI Field Start	SR-ER03-008										
R-Area Burning/Rubble Pits (131-R, -1R) ROD Submittal	SR-ER03-032										
R-Area Groundwater Field Start	SR-ER03-034										
R-Area Groundwater RA Start	SR-ER03-036										
R-Area Groundwater ROD Submittal	SR-ER03-035										
R-Area Reactor Seepage Basins (904-57G, -58G, -59G, -60G, -103G,	SR-ER03-005										
R-Area Reactor Seepage Basins (904-57G, -58G, -59G, -60G, -103G,	SR-ER03-007										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
R-Area Rubble Pile (631-25G) RA Start	SR-ER03-038									Y	
R-Area Rubble Pile (631-25G) RFI/RI Field Start	SR-ER03-013									Y	
R-Area Rubble Pile (631-25G) ROD Submittal	SR-ER03-037									Y	
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-047										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-048										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-049										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-050										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-051										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-052										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-053										
Submittal of Site Evaluation Report(s) for Six (6) Areas	SR-ER03-054										
K-Area Bingham Pump Outage Pit (643-1G) Remedial Action Start	SR-ER03-118										Unfunded at Target
Lower Three Runs IOU Field Start	SR-ER03-060										
Lower Three Runs IOU ROD	SR-ER03-061										
R-Area Bingham Pump Outage Pits (643-8G,-9G, -10G) ROD	SR-ER03-065										Unfunded at Target

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
R-Area Bingham Pump Outage Pits (643-8G, -9G, -10G) RA Start	SR-ER03-063										Unfunded at Target
Lower Three Runs IOU Monitoring Field Start	SR-ER03-070										
Stormwater Outfall A-013 Field Start	SR-ER03-072										
Stormwater Outfall A-013 ROD	SR-ER03-075										
Stormwater Outfall A-013 RA Start	SR-ER03-076										
A-001 Outfall Field Start	SR-ER03-080										
A-001 Outfall ROD	SR-ER03-081										
A-001 Outfall RA Start	SR-ER03-083										
P-Area Reactor Groundwater Field Start	SR-ER03-090										
P-Area Reactor Groundwater ROD	SR-ER03-091										
P-Area Reactor Groundwater RA Start	SR-ER03-092										
Combined Spills North of Building 105-R Field Start	SR-ER03-100										
Combined Spill North of Building 105-R ROD	SR-ER-102										
Combined Spills North of Building 105-R RA Start	SR-ER03-104										
Project Start	SR-ER03-001				Y						
Project End										Y	

Performance Measure Metrics

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Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
RS														
Assess.	NR	46.00	17.00	63.00	3.00	10.00	10.00	5.00	2.00	2.00	10.00	1.00	1.00	5.00
RS														
Cleanup	NR	29.00	33.00	62.00	3.00	10.00	10.00	4.00	1.00	1.00				2.00
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	
RS														
Assess.	NR	5.00	4.00	6.00	2.00	3.00	2.00	2.00	8.00					
RS														
Cleanup	NR	2.00	10.00	1.00	1.00	5.00	4.00	6.00	10.00	7.00				
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total				
RS														
Assess.	NR									70.00				
RS														
Cleanup	NR									70.00				
Release Sites														
Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
SARS	0039		631-2G \ Gunsite 218 Rubble Pile, 631-23G	Waste/Miscellaneous Surface Debris	2005	2005		2009	2009			N		N
SARS	0042		108-4R \ R-AREA OVERFLOW BASIN	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y

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Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
SARS	0107		643-4G \ P-AREA BINGHAM PUMP OUTAGE PIT	Above Ground Material / Waste/Debris Piles	1999	1999	7/14/1999	2004	2004		1993	N		Y
SARS	0109		189-P \ P-AREA COAL PILE RUNOFF BASIN	Above Ground Material / Waste/Scrap Yards	1998	1998	4/30/1998	2004	2004	4/30/1998	1993	N		N
SARS	0110		685-G \ PAR Pond Exposed Shore Line from Pond Drainage	Spills and Leaks/Surface Spills	2012	2012		2016	2016			N		Y
SARS	0111		761-5G \ PAR POND SLUDGE LAND APPLICATION SITE	Above Ground Material / Waste/Muck Piles	2011	2011		2015	2015		1993	N		N
SARS	0112		904-79G \ R-AREA ACID/CAUSTIC BASIN	Liquid Surface Impoundments/Seepage Basins	2002			2006	2005		1993	N		N
SARS	0113		643-10G \ R-AREA BINGHAM PUMP OUTAGE PIT NO. 10	Above Ground Material / Waste/Debris Piles	2001	1999		2005	2004		1993	N		Y
SARS	0114		643-8G \ R-AREA BINGHAM PUMP OUTAGE PIT NO. 8	Above Ground Material / Waste/Debris Piles	2001	1999		2005	2004		1993	N		Y
SARS	0115		643-9G \ R-AREA BINGHAM PUMP OUTAGE PIT NO. 9	Above Ground Material / Waste/Debris Piles	2001	1999		2005	2004		1993	N		Y
SARS	0116		131-1R \ R- AREA BURNING RUBBLE PIT NO. 2	Waste/Burn Pits	2004	2004		2008	2008		1993	N		Y
SARS	0117		131-R \ R- AREA BURNING RUBBLE PIT NO. 1	Waste/Burn Pits	2004	2004		2008	2008		1993	N		Y
SARS	0118		631-25G \ R-Area Rubble Pile	Spills and Leaks/Surface Spills	2012	2012		2016	2016		1993	N		Y
SARS	0119		904-103G \ R-REACTOR SEEPAGE BASIN NO.1	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y
SARS	0120		904-104G \ R-REACTOR SEEPAGE BASIN NO.2	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y

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Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
SARS	0121		904-57G \ R-REACTOR SEEPAGE BASIN NO.3	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y
SARS	0122		904-58G \ R-REACTOR SEEPAGE BASIN NO.4	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y
SARS	0123		904-59G \ R-REACTOR SEEPAGE BASIN NO.5	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y
SARS	0124		904-60G \ R-REACTOR SEEPAGE BASIN NO.6	Liquid Surface Impoundments/Seepage Basins	2001	2003		2005	2004		1993	N		Y
SARS	0152		SECOND PAR POND SITE	Liquid Surface Impoundments/Holding Ponds	1997		1/17/1997	1997		1/17/1997		N	Pending	N
SARS	0163		GUNSITE 012 RUBBLE PILE	Dispersed Surface Contamination/Firing Ranges and Ordnance	2006	2006		2010	2010			N		N
SARS	0208		ADVANCED TACTICAL TRAINING AREA FIR R	Dispersed Surface Contamination/Firing Ranges and Ordnance	2008	2010		2012	2012			N		N
SARS	0231		AREA NORTH OF 105R - NBN	Above Ground Material / Waste/Muck Piles	1995		9/30/1995			9/30/1995	1993	Y	Pending	N
SARS	0233		LAYDOWN AREA NORTH OF 105R	Above Ground Material / Waste/Muck Piles	1995		9/30/1995			9/30/1995	1993	Y	Pending	N
SARS	0236		788-0A \ A-Area Ash Pile No. 1	Above Ground Material / Waste/Muck Piles	2012	2016		2016	2016		1993	N		N
SARS	0237		788-2A \ A-Area Ash Pile No. 2	Above Ground Material / Waste/Muck Piles	2012	2016		2016	2016		1993	N		N

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SARS	0247		105-P \ Combined Spills from 105-P	Spills and Leaks/Surface Spills	1997		6/24/1997	1997		6/24/1997	1993	N	Pending	Y
SARS	0251		106-P \ Combined Spills from 106-P	Spills and Leaks/Surface Spills	1997		6/24/1997	1997		6/24/1997	1993	N	Pending	Y
SARS	0255		109-P \ Combined Spills from 109-P	Spills and Leaks/Surface Spills	1997		6/24/1997	1997		6/24/1997	1993	N	Pending	Y
SARS	0259		183-2P \ Combined Spills from 183-2P	Spills and Leaks/Surface Spills	1997		10/30/1996	1997		10/30/1996		N	Pending	Y
SARS	0271		107-R \ Cooling Water Effluent Sump, 107-R	Liquid Surface Impoundments/Sumps	1998	1997	12/29/1997	1998	1997	12/29/1997	1993	N		N
SARS	0312		Old R-Area Discharge Canal	Waste/Trenches / Outfalls	2012	2012		2016	2016		1993	N		Y
SARS	0313		188-0P \ P-AREA ASH BASIN, 188-0P	Liquid Surface Impoundments/Settling and Separation Basins	2006	2006		2010	2010		1993	N		N
SARS	0314		105-P \ P-Area Disassembly Basin	Liquid Surface Impoundments/Settling and Separation Basins	2009	2009		2013	2013		1993	N		Y
SARS	0316		P-AREA REACTOR COOLING WATER SYSTEM	Buildings & Equipment/Other Buildings	2008	2008		2012	2012		1993	N		Y
SARS	0321		Patterson Mill Road Rubble Pile	Above Ground Material / Waste/Debris Piles	1998	1998	3/31/1998	1998	1998	3/31/1998	1993	N		N
SARS	0324		183-2R \ Potential Release of NaOH/H2SO4 from 183-2R	Tanks/Above Ground Storage Tanks	2010	2010		2014	2014		1993	N		N
SARS	0328		109-R \ Purge Water Storage Basin	Liquid Surface Impoundments/Settling and Separation Basins	2005	2005		2009	2009		1993	N		Y
SARS	0329		188-0R \ R-Area Ash Basin	Liquid Surface	2006	2006		2010	2010		1993	N		N

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				Impoundments/Settling and Separation Basins										
SARS	0330		105-R \ R-Area Disassembly Basin	Liquid Surface Impoundments/Settling and Separation Basins	2009	2009		2013	2013		1993	N		Y
SARS	0337		Rubble Pile Across From Gunsite 012	Above Ground Material / Waste/Debris Piles	2006	2006		2010	2010		1993	N		N
SARS	0341		CMK-002 \ SANDBLAST AREA CMK-002	Above Ground Material / Waste/Scrap Yards	2000	2000		2000	2000			N		N
SARS	0342		184-K \ Sandblast Area - 184-K (CMK-003-O&M Plan)	Above Ground Material / Waste/Scrap Yards	2004	2000		2008	2000		1993	N		N
SARS	0356		Sandblast Area - ETF Suppression Bldgs (3) (CMH-004)	Above Ground Material / Waste/Scrap Yards	1997		9/25/1997	1997		9/25/1997	1993	N		N
SARS	0358		P-AREA SANDBLAST AREA CMP-001	Above Ground Material / Waste/Scrap Yards	1997		9/25/1997	1997		9/25/1997		N	Pending	N
SARS	0365		Spill on 01/01/80 of 5600 lb of 50% Nitric Acid	Spills and Leaks/Surface Spills	1999	1999	12/18/1998	1999	1999	12/18/1998	1993	Y		N
SARS	0368		Spill on 01/01/85 of 15 Gal of 6% Potassium Permanganate	Above Ground Material / Waste/Storage Yards and Pads			6/30/1998		1998	6/30/1998	1993	N		N
SARS	0370		Spill on 01/01/86 of 2 Gal of 50% Sodium Hydroxide	Above Ground Material / Waste/Storage Yards and Pads			6/30/1998		1998	6/30/1998	1993	N		N
SARS	0373	R	Spill on 01/12/80 of <5 Gal of Waste Water - Rad	/	2012	2012		2016	2016		1993	N		N
SARS	0389		Spill on 12/02/81 of 800 lb of Hydrogen Sulfide	Spills and Leaks/Surface Spills	2007	2000		2011	2000		1993	N		N
SARS	0391	R	Spill on 02/01/83 of 50 Gal of Oil - Rad	/	2012	2012		2016	2016		1993	N		N

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SARS	0421		Spill on 05/12/81 of 400 lb of Hydrogen Sulfide	Spills and Leaks/Surface Spills	2004	2000		2008	2000		1993	N		N
SARS	0423	R	Spill on 05/02/85 of 10 Gal of Cooling Water from Tank Farm	/	2012	2012		2016	2016		1993	N		N
SARS	0427		Spill on 05/23/75 of 3 Gal of Waste Water - Rad	Spills and Leaks/Surface Spills	1997		6/9/1997	1997		6/9/1997	1993	N	Pending	Y
SARS	0428		183-P \ Spill on 05/24/82 of 10 Gal of 31.5% Acid from 183-P	Spills and Leaks/Surface Spills	1997		9/25/1997	1997		9/25/1997	1993	N	Pending	N
SARS	0434		106-P \ Spill on 05/09/85 of 375 Gal of Process Water from 106-P	Spills and Leaks/Surface Spills	1997		6/2/1997	1997		6/2/1997	1993	N	Pending	Y
SARS	0441		Spill on 06/03/86 of 5 Gal of Neutralization System Water	Above Ground Material / Waste/Storage Yards and Pads			6/30/1998		1998	6/30/1998	1993	N		N
SARS	0443		Spill on 07/11/84 of 4 Gal of Process Solution	Spills and Leaks/Surface Spills	2004	2000		2008	2000		1993	N		N
SARS	0445		Spill on 07/05/88 of 2 Pint of 64% Nitric Acid in F-Area	Above Ground Material / Waste/Storage Yards and Pads			6/30/1998		1998	6/30/1998	1993	N		N
SARS	0449		748-A \ Spill on 09/01/85 of <1 lb of Mercury from 748-A	Spills and Leaks/Surface Spills	2000	2017		2004	2017		1993	N		N
SARS	0452		Spill on 09/21/84 of 200 Gal of Water -Rad	Spills and Leaks/Surface Spills	2005	2005		2009	2009		1993	N		Y
SARS	0453		607-22P \ Spill on 09/28/87 of <30 Gal of Bromocide Soln from 607-22P	Spills and Leaks/Surface Spills	1998	1997	3/31/1998	1998	1997	3/31/1998	1993	N		N
SARS	0455		Stadia Lights with Poles	Miscellaneous/Other	1998	1998	6/2/1998	1998	1998	6/2/1998	1993	N		N
SARS	0462		Stormwater Outfall P-010	Waste/Trenches / Outfalls	2005	2005		2009	2009		1993	N		N
SARS	0471		GENERAL AREA, OTHER: PROCESS	/	2010	2010		2014	2014			N		

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			AND SEWER LINES AS ABANDONED, NBN											
SARS	0477		P REACTOR AREA: P-AREA REACTOR AREA CASK CAR RAILROAD TRACKS AS ABANDONED, NBN	/	2008	2008		2012	2012			N		
SARS	0478		R REACTOR AREA: R-AREA REACTOR AREA CASK CAR RAILROAD TRACKS AS ABANDONED, NBN	/	2007	2007		2011	2011			N		
SARS	0490		SPILL ON 04/57 OF RAD LIQUID FROM SOLVENT TRAILER, NBN	/	2006	2006		2010	2010			N		
SARS	0492		CMC-001 \ SANDBLAST AREA CMC-001, NBN	/	2003	2000		2007	2000			N		
SARS	0498		SANDBLAST AREA CMP-002, NBN	/	1996		9/30/1996			9/30/1996		Y	Pending	
SARS	3010		Lower Three Runs Integrator Operable Unit (Index# 505)	/	2013			2017				N		N
SARS	3018		Release form the Decontamination of R-Area Reactor Disassembly Basin, NBN (Index# 513)	/	2013			2017				N		N
SARS	3021		Combined Spils North of Building 105-R, NBN (Index# 517)	/	2006			2010				N		N

Technology Needs

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Technology Needs

Site Need Code: SR99-3018

Site Need Name: Innovative Technologies to Replace Pump and Treat Technologies for Groundwater Remediation

Focus Area Work Package ID: SS-08

Focus Area Work Package: Saturated Zone Treatment Systems

Focus Area: SCFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies

Dynamic Underground Stripping

In Situ Redox Manipulation

Passive Reactive Barrier

In Situ Chemical Oxidation Using Potassium Permanganate

Hydrous Pyrolysis/Oxidation

Geosyphon/Geoflow

Fenton's Reagent

Cost Savings (in thousands of dollars)

Range of Estimate

Related CCP Milestones

Related Waste Streams

Agree?

Change?

02190: AI - LLW Groundwater (F&H Seepage Basin)

Y

N

02214: BS - LLW Groundwater (ETF)

Y

N

02191: AK - Hazardous Groundwater (A/S)

Y

N

02212: BQ - HAZ Groundwater

Y

N

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Technology Needs

Site Need Code: SR99-3019

Site Need Name: Long-Term Cover System for a Humid Environment

Focus Area Work Package ID: SS-11

Focus Area Work Package: Validation, Verification, & Long-Term Monitoring of Containment & Treatment

Focus Area: SCFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies

Cost Savings (in thousands of dollars)

Range of Estimate

Related CCP Milestones

Related Waste Streams

Agree?

Change?

02209: BM - LLW Soil/Rubble/Debris (Cap)

Y

N

02205: BI - HAZ Soil/Debris (Cap)

Y

N

Site Need Code: SR99-3021

Site Need Name: Alternative Sample Collection and Well Installation Technology that Eliminates or Significantly Reduces Aqueous or Non-Aqueous Investigative Derived Waste (IDW)

Focus Area Work Package ID: SS-01

Focus Area Work Package: Characterization, Monitoring, Modeling and Analysis

Focus Area: SCFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies

Cost Savings (in thousands of dollars)

Range of Estimate

Related CCP Milestones

Related Waste Streams

Agree?

Change?

02186: AC - HW Soil/Rubble/Debris

Y

N

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Technology Needs

Site Need Code: SR99-3024

Site Need Name: Deploy Phytoremediation or a Passive Technology for Attenuation of VOCs

Focus Area Work Package ID: SS-06

Focus Area Work Package: Biological Treatment Systems

Focus Area: SCFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies

Cost Savings (in thousands of dollars)

Range of Estimate

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